

(Boston)

The Quantum View of the World Transpenned  
~~Ideal Book in Physics~~

1.) Singlet spin state for two spin- $\frac{1}{2}$  particles

12.) The EPR Argument

1a.) 3 measurements not in an experiment

2. What does measurement do?

2a.) How is this change brought about?

2b.) Locality in the EPR argument / LO<sub>1</sub>, LO<sub>2</sub>

2c.) EPR Argument (1935)

2d.) LO<sub>3</sub>

3.) The Bell Argument

3a.) The Bell Experiment

3b.) The Bell Inequality (statement)

[4.] The Bell Inequality (proof)

[5.]  $C_{QM}(a, b)$ ,  $C_{classical}(a, b)$

[6.] Violation of Bell Inequality by QM

[6a.] The 4 Correlation Coefficients

6b.) Aspect's Experiment

6c.) The optical setup of Aspect's Experiment.

7.) The Sharp - Standard Approach - LOC<sub>4</sub>

8.) PLED (statement)

9.) Problem with PLED in an independent situation



[10) Truth conditions for  $\phi \models \rightarrow \psi$ ]

11) Locality

11a) Is Locality violated in EPR?

12) Conflict with SR of violating LOC<sub>1/3</sub>

13) Kochen-Specker Result (+ FVNC)  
~~(+ VR and FVNC)~~

13a) FVNC contd and Desynchronization  
— FVNC\*

14) Definition of  $\{A\}_{\{B\}}^{\phi}$  and  $\{A\}_{\{B\}}^{\phi}(c)$

[14a) Definition of  $\{Q \& I\}_{\{A, B\}}^{\phi}(P, E)$  <sup>ontological contextuality</sup> <sub>Exhaustive contextuality</sub>

[15) OLOC and ELOC <sub>in symbols</sub> <sup>14b) OLOC in words</sup> <sup>14c) ELOC in words</sup>

16) Bellard-Heywood result.  
(FVNC + VR + FVNC + OLOC  $\rightarrow$  Contradiction)  
Defn of VR.

[17) CVA.]

[18) CVA for separated systems]

[19) Incompatibility of CVA and Locality]

[19a) Proof contd. — FVNC\*\*]

20) Interaction of Physics and Philosophy

(1) Global Book or Region